Metadata for Voyageurs National Park, Field Plots Data Base for Vegetation Mapping

Identification_Information:
Citation:
Citation_Information:
Originator:
U.S. Geological Survey, Upper Midwest
Environmental Sciences Center, 2630 Fanta Reed
Road, La Crosse, Wisconsin 54603
Publication_Date: 200102
Title: Voyageurs National Park, Fields Plot Data Database for Vegetation Mapping Project
Geospatial_Data_Presentation_Form: database
Series_Information:
Series_Name: USGS-NPS Vegetation Mapping Program
Issue_Identification: Voyageurs NP Vegetation Mapping Project
Publication_Information:
Publication_Place: Denver, Colorado
Publisher: U.S. Geological Survey, Center for Biological Informatics
Other_Citation_Details:
The spreadsheet export of the PLOTS database was
prepared by the U.S. Geological Survey (USGS)
Upper Midwest Environmental Sciences Center
(UMESC) for the USGS-NPS Vegetation Mapping
Program. The Nature Conservancy (TNC) and their
affiliates (Association for Biodiversity
Information (ABI) and Minnesota County Biological
Survey MCBS) of the Minnesota Department of
Natural Resources) provided vegetation field data
collection, data entry, analysis, and
classification development.
Online_Linkage: http://biology.usgs.gov/npsveg/voya/fielddata.html
Larger_Work_Citation:
Citation_Information:
Originator:
U.S. Geological Survey, Upper Midwest
Environmental Sciences Center
Publication_Date: 200102
Title:
Voyageurs National Park Vegetation Mapping
Project, USGS-NPS Vegetation Mapping Program
Geospatial_Data_Presentation_Form: digital data information for Voyageurs National Park
Series_Information:
Series_Name: USGS-NPS Vegetation Mapping Program
Issue_Identification: Voyageurs NP Vegetation Mapping Project
Publication_Information:
Publication_Place: Denver, Colorado
Publisher: U.S. Geological Survey, Center for Biological Informatics
Other_Citation_Details:
The Voyageurs National Park Vegetation Mapping
Project is part of the USGS-NPS Vegetation Mapping
Program, which is managed by the USGS Center for
Biological Informatics. The USGS UMESC provided

project coordination and compiled all project data for distribution. The UMESC produced all spatial database sets: vegetation spatial database coverage, observation points, vegetation field plots, accuracy assessment, and various other ancillary spatial coverages. The UMESC also performed the accuracy assessment analysis of the vegetation spatial database coverage, prepared final project documentation discussing methods and results, and provided metadata reports. TNC and their affiliates (ABI and MCBS) provided ecological and vegetation support, vegetation field sampling (plot samples and accuracy assessment), data entry, vegetation analysis, methods documentation, and classification development (including community descriptions) based on the U.S. National Vegetation Classification (USNVC). Voyageurs National Park provided staff to assist in field efforts, boat transportation, and knowledge of the local area.

Online_Linkage: http://biology.usgs.gov/npsveg/voya/

Description:

Abstract:

A total of 191 vegetation field plot samples were collected at Voyageurs National Park and environs to support vegetation classification development. Teams of ecologists and botanists collected vegetation field data during the 1996 through 1998 field seasons. This data was used in an analysis to determine and describe the USNVC associations that existed within the project area.

This metadata report is for 2 database sets containing the physical descriptions aand species listing of the vegetation field plot data. The first is a dBASE IV spreadsheet of the complete field data of the vegetation field plot physical. The second data set contains the Species Listing of the Vegetation Field Plot data. The non-spatial data is complete as a dBASE spreadsheet file, which was exported from the PLOTS database.

Purpose:

Vegetation field plot samples were collected to support vegetation classification development for the Voyageurs NP Vegetation Mapping Project, USGS-NPS Vegetation Mapping Program.

Supplemental_Information:

Physical Description - Information within the spatial point coverage includes: ArcInfo default items, Vegetation Plot Number, Classified Community Name (USNVC Association), Provisional Community Name (Synonym), Community Element Global Code, Field Date, Corrected X-Y Coordinates (UTM, Zone 15, NAD83), and USGS 7.5-minute and 3.75-minute Quadrangles. The dBASE IV spreadsheet (export of the PLOTS Physical Description database) contains exhaustive content of the physical field data

collected. In addition to those items listed in the spatial database, the spreadsheet provides Location Code, Sublocation, Quad Code, GPS Technique, the original Field X-Y Coordinates (NAD27 or NAD83), UTM Zone, Surveyors, Plot Directions, Plot Dimensions and Shape, Ground Photo Info, Representation, Environmental Factors (elevation, slope, aspect, topology), Hydrology (Cowardin wetland, regime), various Soil features, numerous Physiognomic features, Comments, Minnesota Releve #, and historic (old/draft) Project Community Name. Species Listing - Information within the database include: Plot Code, Plot Species Counter, Plant Symbol, Scientific Name, Common Name, Family, Specimen Number, Used Plants, Source, Within Plot, Stratum Sort, Stratum, Diagnostic, Range Cover, Real Cover, Other Measures, DBH, Update, and User.

Time_Period_of_Content:
Time_Period_Information:
Range_of_Dates/Times:
Beginning_Date: 199607
Ending_Date: 199809
Currentness_Reference: Range of dates for field data collection

Status:
Progress: Complete
Maintenance_and_Update_Frequency: None planned

Spatial_Domain:
Description_of_Geographic_Extent: Voyageurs National Park and environs
Bounding_Coordinates:
West_Bounding_Coordinate: -93.228
East_Bounding_Coordinate: -92.45
North_Bounding_Coordinate: 48.618
South_Bounding_Coordinate: 48.299

Keywords:
Theme:
Theme_Keyword_Thesaurus: None
Theme_Keyword: Digital Spatial Database
Theme_Keyword: Vegetation Field Plots
Theme_Keyword: Vegetation Sampling
Theme_Keyword: PLOTS
Theme_Keyword: Physical Description
Theme_Keyword: Vegetation
Theme_Keyword: US National Vegetation Classification
Theme_Keyword: USNVC
Theme_Keyword: National Park
Place:
Place_Keyword_Thesaurus: None
Place_Keyword: Voyageurs National Park
Place_Keyword: Minnesota
Place_Keyword: USA
Place_Keyword: Ontario
Place_Keyword: Canada
Place_Keyword: Rainy Lake

Taxonomy:
Keywords/Taxon:

Taxonomic_Keyword_Thesaurus: None
Taxonomic_Keywords: US National Vegetation Classification
Taxonomic_Keywords: USNVC
Taxonomic_Keywords: Vegetation
Taxonomic_Keywords: Plant Community
Taxonomic_Keywords: Association
Taxonomic_System:
Classification_System/Authority:
Classification_System_Citation:
Citation_Information:
Originator:
Anderson, M., P. Bourgeron, M. T. Bryer, R. Crawford, L. Engelking, D. Faber-Langendoen, M. Gallyoun, K. Goodin, D. H. Grossman, S. Landaal, K. Metzler, K. D. Patterson, M. Pyne, M. Reid, L. Sneddon, and A. S. Weakley
Publication_Date: 1998
Title:
International classification of ecological communities: terrestrial vegetation of the United States. Volume II. The National Vegetation Classification System: list of types
Geospatial_Data_Presentation_Form: publication
Publication_Information:
Publication_Place: Arlington, Virginia, USA
Publisher: The Nature Conservancy
Other_Citation_Details:
U.S. National Vegetation Classification listing of physiognomic and floristic levels.
Online_Linkage: http://www.natureserve.org/
Online_Linkage: http://www.conserveonline.org/2001/03/p/en/vol1.pdf
Classification_System_Modifications:
The Classified Community Name (USNVC Association), Provisional Community Name (Synonym), and Community Element Global Code are included in both the spatial point coverage and the dBASE spreadsheet file.
Classification_System/Authority:
Classification_System_Citation:
Citation_Information:
Originator:
Sims, R.A., W.D. Towill, K.A. Baldwin, P. Uhlig and G.M. Wickware
Publication_Date: 1997
Title:
Field guide to the forested ecosystem classification for northwestern Ontario
Geospatial_Data_Presentation_Form: publication
Publication_Information:
Publication_Place: Thunder Bay, Ontario
Publisher:
Ontario Ministry of Natural Resources, Northwest Science and Technology
Other_Citation_Details: Field Guide FG-03. 176 pp.
Classification_System_Modifications:
plot analysis results to help deterimine

vegetation classification.
Classification_System/Authority:
Classification_System_Citation:
Citation_Information:
Originator:
Harris, A.G., S.C. McMurray, P.W.C. Uhlig, J.K. Jeglum, R.F. Foster and G.D. Racey
Publication_Date: 1996
Title:
Field guide to the wetland ecosystem classification for northwestern Onatario
Geospatial_Data_Presentation_Form: publication
Publication_Information:
Publication_Place: Thunder Bay, Ontario
Publisher:
Ontario Ministry of Natural Resources, Northwest Science and Technology
Other_Citation_Details: Field guide FG-01, 74 pp. + Append.
Classification_System_Modifications:
plot analysis results to help deterimine vegetation classification.
Classification_System/Authority:
Classification_System_Citation:
Citation_Information:
Originator:
Don Faber-Langendoen, and Midwest State Natural Heritage Program Ecologists
Publication_Date: 1996
Title:
Terrestrial Vegetation of the Midwest United States. From, International Classification of Ecological Communities: Terrestrial Vegetation of the United States
Geospatial_Data_Presentation_Form: publication
Publication_Information:
Publication_Place: Arlington, Virginia, USA
Publisher: The Nature Conservancy
Other_Citation_Details: 33 pp. (+ tables)
Classification_System_Modifications:
plot analysis results to help deterimine vegetation classification.
Classification_System/Authority:
Classification_System_Citation:
Citation_Information:
Originator:
US Department of Agriculture, Natural Resource Conservation Service
Publication_Date: 1999
Title: The PLANTS database
Geospatial_Data_Presentation_Form: database
Publication_Information:
Publication_Place:
National Plant Data Center, Baton Rouge, Louisianna
Publisher: USDA, NRCS
Other_Citation_Details:

Official citation of publication as follows: USDA, NRCS 1999. The PLANTS database (http://plants.usda.gov/). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
Online_Linkage: http://plants.usda.gov/
Taxonomic_Procedures:
Plot sizes ranged from 20 x 20 m for forests and woodlands to 10 x 10 m for shrublands, herbaceous, and nonvascular vegetation. Plots were placed subjectively in the most representative part of each stand of vegetation. The vegetation was visually divided into strata, and height and cover abundance of each stratum was estimated. Cover of dominant life forms was also estimated to match methods used by the Minnesota Natural Heritage Program survey methods (e.g. total cover of evergreen trees or shrubs was recorded separately from cover of deciduous trees or shrubs (Norm Aaseng, personal communication, 1996). All the species of each stratum were listed (including mosses and lichens) and percent cover estimated using the Braun-Blanquet cover scale. Additional species within the vegetation unit or polygon that occurred outside of sampled plots (generally within 2 m of the plot border) were listed separately. Species that were not identifiable in the field were collected for later identification. Vegetation plot data were entered into the Minnesota Natural Heritage Program's plot database. Species were assigned standardized codes and names based on the PLANTS database (USDA, NRCS 1999). These data were transferred to the PLOTS database developed by the Nature Conservancy (TNC 1997) for final inclusion in this report. For the vegetation analysis, the data were analyzed using the PC-ORD Multivariate Analysis package (McCune and Mefford 1997). The data were analyzed in a series of runs, partitioning the data into smaller sets based on clusters found in the larger data sets, until sufficient resolution was achieved. Multivariate analysis was done using both Non-metric Multidimensional Scaling or NMS (Clarke 1993) and Cluster Analysis. A Bray-Curtis ordination was used as a starting point for the NMS and Ward's Method was used in the Cluster Analysis. These were then reviewed and assessed for perceived environmental gradients (e.g. moisture gradients, peat depth, soil depth, etc.). Indicator Species Analysis (Dufrene and Legendre 1997) was used to identify indicator species and to assess the reassignment of plots into different cluster analysis groups. These groups were compared with the USNVC (Faber-Langendoen et al. 1996, Grossman et al. 1998), as well as to northwestern Ontario types (Sims et al. 1989 and 1997, Harris et al. 1996). Care was taken not to over-emphasize local variations found at Voyageurs compared to more extensive information compiled at the state or regional level. Nevertheless, several types in the USNVC were revised based on these analyses. Plot summaries were produced for each type.
Taxonomic_Classification:
Taxon_Rank_Name: Kingdom
Taxon_Rank_Value: Plantae

Access_Constraints: None
Use_Constraints:
Those using the database should understand the data and determine for themselves the fitness of the data prior to use. For publication and dissemination, citations or credit should be given to the U.S. Geological Survey Center for Biological Informatics, the National Park Service, and the U.S. Geological Survey Upper Midwest Environmental Sciences Center. The Nature Conservancy and their affiliates (Association for Biodiversity Information and Minnesota County Biological Survey of the Minnesota Department of Natural Resources) should be given credit for ecological support.
Point_of_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: USGS-NPS Vegetation Mapping Program Coordinator
Contact_Organization: U.S. Geological Survey, Center for Biological Informatics
Contact_Address:
Address_Type: mailing and physical address
Address:
U.S. Geological Survey, Center for Biological Informatics, MS 302, Room 8000, Building 810, Denver Federal Center
City: Denver
State_or_Province: Colorado
Postal_Code: 80225
Contact_Voice_Telephone: (303) 202-4220
Contact_Facsimile_Telephone: 303-202-4229
Contact_Facsimile_Telephone: 303-202-4219 (org)
Contact_Electronic_Mail_Address: gs-b-npsveg@usgs.gov
Browse_Graphic:
Browse_Graphic_File_Name: http://biology.usgs.gov/npsveg/voya/images/voyaplot.gif
Browse_Graphic_File_Description:
Graphic file showing vegetation filed plot locations. Low resolution for web browser - 1055 x 815 pixel size, 99 KB file size.
Browse_Graphic_File_Type: GIF
Data_Set_Credit: USGS UMESC, TNC and their affiliates (ABI and MCBS)
Native_Data_Set_Environment: UNIX-ARC/INFO

Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report:
The various attributes within the spatial database sets were reviewed and checked for consistency with their original sources (digital data, data sheets), using a combination of manual and digital means.
Logical_Consistency_Report:
All point features are unique with their own site attribute and X-Y coordinates. There are no duplicate points. Vegetation species are consistent throughout the database as per the PLANTS database.

Completeness_Report:
All 191 vegetation field plot samples are included in the spatial point coverage. Each database point is complete with select information about the field site, along with X-Y coordinates with projection in Universal Transversal Mercator (UTM), Zone 15, with datum in North American Datum of 1983 (NAD83). Each field plot is complete with species listings.
Positional_Accuracy:
Horizontal_Positional_Accuracy:
Horizontal_Positional_Accuracy_Report:
X-Y coordinates of most data locations were collected using a Rockwell Precision Lightweight GPS Receiver (PLGR). A few locations were collected using Trimble GPS units. Most points were successfully collected with positional accuracies ranging from +/- 6 to +/- 20 meters.
Lineage:
Methodology:
Methodology_Type: Field
Methodology_Identifier:
Methodology_Keyword_Thesaurus: None
Methodology_Keyword: Vegetation Field Plot
Methodology_Keyword: Vegetation Sampling
Methodology_Keyword: PLOTS
Methodology_Description:
Vegetation Field Plot Methods, modified and adapted to unique circumstances with the Voyageurs NP Vegetation Mapping Project.
Methodology_Citation:
Citation_Information:
Originator:
Environmental Systems Research Institute and The Nature Conservancy
Publication_Date: 199412
Title:
Field Methods for Vegetation Mapping. NBS/NPS Vegetation Mapping Program
Edition: Final Draft
Geospatial_Data_Presentation_Form: document
Other_Citation_Details:
Section 5 of "Field Methods for Vegetation Mapping" contains the procedures for vegetation field plot sampling. Methodology modified and adapted to match unique characteristics and challenges.
Online_Linkage: http://biology.usgs.gov/npsveg/fieldmethods/index.html
Methodology:
Methodology_Type: Lab
Methodology_Identifier:
Methodology_Keyword_Thesaurus: None
Methodology_Keyword: PLOTS
Methodology_Keyword: Vegetation Analysis
Methodology_Description: Analysis package for ecological data.
Methodology_Citation:

Citation_Information:
Originator: McCune, B., and M. J. Mefford
Publication_Date: 1997
Title: PC-ORD. Mulitivariate Analysis of Ecological Data
Edition: Version 3.0
Geospatial_Data_Presentation_Form: Mulitivariate Analysis of Ecological Data software package
Publication_Information:
Publication_Place: Gleneden Beach, Oregon
Publisher: MjM Software Design
Other_Citation_Details: Analysis of ecological data
Methodology:
Methodology_Type: Lab
Methodology_Identifier:
Methodology_Keyword_Thesaurus: None
Methodology_Keyword: PLOTS
Methodology_Keyword: Vegetation Analysis
Methodology_Description:
Used with Cluster Analysis to to perform
multivariate analysis on vegetation plots data.
Methodology_Citation:
Citation_Information:
Originator: Clarke, K. R.
Publication_Date: 1993
Title:
Non-parametric multivariate analyses of changes in
community structure
Geospatial_Data_Presentation_Form: Publication
Publication_Information:
Publication_Place: Adelaide, Australia
Publisher: Australian Journal of Ecology
Other_Citation_Details: 18:112-143.
Methodology:
Methodology_Type: Lab
Methodology_Identifier:
Methodology_Keyword_Thesaurus: None
Methodology_Keyword: PLOTS
Methodology_Keyword: Vegetation Analysis
Methodology_Description:
Used to identify indicator species of vegetation
plots, and to assess the reassignment of plots
into different Cluster Analysis groups.
Methodology_Citation:
Citation_Information:
Originator: Dufrene, M. and P. Legendre
Publication_Date: 1997
Title: need for a flexible asymmetrical approach
Geospatial_Data_Presentation_Form: Publication
Publication_Information:
Publication_Place: Davis, CA
Publisher: Ecological Monographs
Other_Citation_Details: 67:345-366.
Source_Information:
Source_Citation:
Citation_Information:
Originator:
U.S. Geological Survey, Upper Midwest

```
        Environmental Sciences Center
      Publication_Date: 2000
      Title:
        USGS 7.5-minute and 3.75-minute Quadrangle
        Boundaries of Voyageurs National Park and Environs
      Geospatial_Data_Presentation_Form: database
      Publication_Information:
        Publication_Place: La Crosse, Wisconsin
        Publisher:
          U.S. Geological Survey, Upper Midwest
          Environmental Sciences Center
      Other_Citation_Details:
        7.5-minute and 3.75-minute quadrangle polygon
        coverage modified from original source for the
        Voyageurs NP Vegetation Mapping Project.  Coverage
        used to merge quadrangle names into existing
        spatial database.  Projection in Universal
        Transverse Mercator, Zone 15, and datum in North
        American Datum of 1983.  The coverage is available
        on the project's CD-ROM.
    Source_Scale_Denominator: 12000
    Type_of_Source_Media: digital file
    Source_Time_Period_of_Content:
      Time_Period_Information:
        Single_Date/Time:
          Calendar_Date: Unknown
      Source_Currentness_Reference: final version
    Source_Citation_Abbreviation: VOYA Quadrangle Boundary Coverage
    Source_Contribution: None
  Source_Information:
    Source_Citation:
      Citation_Information:
        Originator: The Nature Conservancy
        Publication_Date: 1997
        Title: PLOTS Database System
        Edition: Version 1.1
        Geospatial_Data_Presentation_Form: database
        Publication_Information:
          Publication_Place: Arlington, Virginia
          Publisher: The Nature Conservancy
    Type_of_Source_Media: digital file
    Source_Time_Period_of_Content:
      Time_Period_Information:
        Range_of_Dates/Times:
          Beginning_Date: 199607
          Ending_Date: 199809
      Source_Currentness_Reference: range of dates for field data collection
    Source_Citation_Abbreviation: VOYA Plots and VOYA Plots-species
    Source_Contribution: None
  Source_Information:
    Source_Citation:
      Citation_Information:
        Originator:
          US Department of Agriculture, Natural Resource
          Conservation Service
        Publication_Date: 1999
```

Title: The PLANTS database
Geospatial_Data_Presentation_Form: database
Publication_Information:
Publication_Place:
National Plant Data Center, Baton Rouge,
Louisianna
Publisher: USDA, NRCS
Other_Citation_Details:
Official citation of publication as follows: USDA,
NRCS 1999. The PLANTS database
(http://plants.usda.gov/). National Plant
Data Center, Baton Rouge, LA 70874-4490 USA.
Online_Linkage: http://plants.usda.gov/
Type_of_Source_Media: digital file
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1999
Source_Currentness_Reference: publication date
Source_Citation_Abbreviation: The PLANTS database
Source_Contribution: None
Source_Information:
Source_Citation:
Citation_Information:
Originator: Kurmis, V., S. L. Webb, and L. C. Merriam
Publication_Date: 1986
Title:
Plant communities of Voyageurs National Park,
Minnesota, U.S.A.
Geospatial_Data_Presentation_Form: database
Publication_Information:
Publication_Place: Minnesota
Publisher: Can. J. Bot.
Other_Citation_Details:
64:531-540. Permanent vegetation plot data within
Voyageurs NP utilized as additional plot data for
the project.
Type_of_Source_Media: paper
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1986
Source_Currentness_Reference: ground condition
Source_Citation_Abbreviation: Kurmis Report
Source_Contribution: None
Source_Information:
Source_Citation:
Citation_Information:
Originator:
Don Faber-Langendoen, and Midwest State Natural
Heritage Program Ecologists
Publication_Date: 1996
Title:
Terrestrial Vegetation of the Midwest United
States. From, International Classification of
Ecological Communities: Terrestrial Vegetation of

the United States
Geospatial_Data_Presentation_Form: publication
Publication_Information:
Publication_Place: Arlington, Virginia, USA
Publisher: The Nature Conservancy
Other_Citation_Details: 33 pp. (+ tables)
Type_of_Source_Media: paper
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1996
Source_Currentness_Reference: publication date
Source_Citation_Abbreviation: None
Source_Contribution: None
Source_Information:
Source_Citation:
Citation_Information:
Originator:
Anderson, M., P. Bourgeron, M. T. Bryer, R. Crawford, L. Engelking, D. Faber-Langendoen, M. Gallyoun, K. Goodin, D. H. Grossman, S. Landaal, K. Metzler, K. D. Patterson, M. Pyne, M. Reid, L. Sneddon, and A. S. Weakley
Publication_Date: 1998
Title:
International classification of ecological communities: terrestrial vegetation of the United States. Volume II. The National Vegetation Classification System: list of types
Geospatial_Data_Presentation_Form: publication
Publication_Information:
Publication_Place: Arlington, Virginia, USA
Publisher: The Nature Conservancy
Other_Citation_Details:
U.S. National Vegetation Classification listing of physiognomic and floristic levels.
Online_Linkage: http://www.natureserve.org/
Online_Linkage: http://www.conserveonline.org/2001/03/p/en/vol1.pdf
Type_of_Source_Media: digital file
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1998
Source_Currentness_Reference: publication date
Source_Citation_Abbreviation: None
Source_Contribution: None
Source_Information:
Source_Citation:
Citation_Information:
Originator:
Sims, R.A., W.D. Towill, K.A. Baldwin, P. Uhlig and G.M. Wickware
Publication_Date: 1997
Title:
Field guide to the forested ecosystem classification for northwestern Ontario

Geospatial_Data_Presentation_Form: publication
Publication_Information:
Publication_Place: Thunder Bay, Ontario
Publisher:
Ontario Ministry of Natural Resources, Northwest Science and Technology
Other_Citation_Details: Field Guide FG-03. 176 pp.
Type_of_Source_Media: paper
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1997
Source_Currentness_Reference: publication date
Source_Citation_Abbreviation: None
Source_Contribution: None
Source_Information:
Source_Citation:
Citation_Information:
Originator:
Harris, A.G., S.C. McMurray, P.W.C. Uhlig, J.K. Jeglum, R.F. Foster and G.D. Racey
Publication_Date: 1996
Title:
Field guide to the wetland ecosystem classification for northwestern Onatario
Geospatial_Data_Presentation_Form: publication
Publication_Information:
Publication_Place: Thunder Bay, Ontario
Publisher:
Ontario Ministry of Natural Resources, Northwest Science and Technology
Other_Citation_Details: Field guide FG-01, 74 pp. + Append.
Type_of_Source_Media: paper
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1996
Source_Currentness_Reference: publication date
Source_Citation_Abbreviation: None
Source_Contribution: None
Source_Information:
Source_Citation:
Citation_Information:
Originator:
Keys, Jr., J., C. Carpenter, S. Hooks, F. Koenig, W.H. McNab, W.E. Russell, and M-L. Smith.
Publication_Date: 1995
Title:
Ecological units of the eastern United States - first approximation (map and booklet of map unit tables)
Geospatial_Data_Presentation_Form: digital publication
Publication_Information:
Publication_Place: Atlanta, Georgia
Publisher: U.S. Department of Agriculture, Forest Service
Other_Citation_Details:

Presentation scale 1:3,500,000, colored. Also available on CD-ROM consisting of GIS coverage in ARCINFO format and map unit descriptions of subsections and sections.
Type_of_Source_Media: paper
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: 1995
Source_Currentness_Reference: publication date
Source_Citation_Abbreviation: ECOMAP
Source_Contribution: None
Process_Step:
Process_Description:
INTRODUCTION, FIELD METHODS, & ANALYSIS: Vegetation field sampling plots were collected and analyzed for vegetation classification development. Vegetation data were collected in the field, entered into a database program, analyzed, compared to existing classification systems, and finally classified as an association type within the USNVC. Most of the plot samples were collected during the 1996 and 1997 field season, with a few collected in 1998. The vegetation field sampling generally followed the methodology outlined in the Program's "Field Methods for Vegetation Methods" document (ESRI & TNC 1994). Gradsect sampling approach is recommended for large-sized park units based on land area. A gradsect approach was used in a modified form, even though Voyageurs National Park is categorized as being a large-sized park, especially if the extended environs is taken into account. Rationalization for the modified approach is due to the fact that most of the project area falls within 1 ecological subsection, as reported by ECOMAP ecological land classification (Keys et al. 1995). The Park was stratified into 3 areas. Plot sampling was generally limited to an average of 3 plots per type and were spread across the project area as much as possible. A total of 191 plots were collected. Additional plot data were available from other existing plot surveys of the area (Kurmis et al. 1986). Plot sizes ranged from 20 x 20 meters for forest and woodlands to 10 x 10 meters for shrublands, herbaceous, and nonvascular vegetation. Plots were placed subjectively to be most representative of the vegetation stand. The vegetation was visually divided into strata, and height and cover abundance of each stratum was estimated. Cover of dominant life forms was also estimated to match methods used by the MCBS survey methods. All species of each stratum were listed and percent cover estimated using the Braun-Blanquet cover scale. Species that were not identifiable in the field were collected for later

identification. In addition to floristic information, environmental information was recorded on the field forms, including surficial geology, hydrologic regime, soil drainage regime, soil texture, slope, aspect, topographic position, and disturbance evidences. X-Y coordinates of each plot were recorded in UTM using a Rockwell Precision Lightweight GPS Receiver (PLGR) and, on occasion, a Trimble GPS unit. Other locational information were also collected. A provisional vegetation type was assigned to the plot. For full documentation on vegetation field plot methods and analysis, including methodology citations and information sources, refer to the metadata report pertaining to physical descriptions for vegetation field plots as noted in the Identification Information's Cross Reference section of this report. The Species Listing database provides a listing of plant species recorded for each vegetation field plot, with each species listed with it's Plant Symbol, Scientific Name, Common Name, and Family. Additional fields support each species that is listed. Refer to the Entity and Attribute Overview Description section of this report.

Process_Date: 1996-1998

Process_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jim Drake

Contact_Organization:

Association for Biodiversity Information, Midwest Resources Office

Contact_Position:

ABI Project Manager for the USGS-NPS Vegetation Mapping Program

Contact_Address:

Address_Type: mailing and physical address

Address: 1313 5th St SE, Ste 314

City: Minneapolis

State_or_Province: Minnesota

Postal_Code: 55414

Contact_Voice_Telephone: (612) 331-0729

Contact_Electronic_Mail_Address: jim_drake@natureserve.org

Process_Step:

Process_Description:

VEGETATION ANALYSIS: All 191 vegetation field plot data were entered into The Minnesota Natural Heritage Program's releve database. Species were assigned standardized codes and names based on the PLANTS database (USDA, NRCS 1999). These data were transferred to the PLOTS database (TNC 1997). The data were analyzed using the PC-ORD Multivariate Analysis package (McCune and Mefford 1997). The data were analyzed in a series of runs, partitioning the data into smaller sets

based on clusters found in the larger sets, until sufficient resolution was achieved. Multivariate analysis was accomplished using both Non-metric Multidimensional Scaling or NMS (Clarke 1993) and Cluster Analysis. A Bray-Curtis ordination was used as a starting point for the NMS and Ward's Method was used in the Cluster Analysis. These were then reviewed and assessed for perceived environmental gradients (e.g. moisture gradients, peat depth, soil depth, etc.). Indicator Species Analysis (Dufrene and Legendre 1997) was used to identify indicator species and to assess the reassignment of plots into different cluster analysis groups. The groups were compared with the Midwest and National versions of the USNVC (Faber-Langendoen et al. 1996, Grossman et al. 1998) and with northwestern Ontario wetland ecosystem classification and forest ecosystem classification systems (Sims et al. 1997, Harris et al. 1996). Care was taken not to over-emphasize local variations found in the project area compared to more state and regional information. Several types in the USNVC were revised based on this analysis.

Process_Date: 1998-1999

Process_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Jim Drake

Contact_Organization:

Association for Biodiversity Information, Midwest Resources Office

Contact_Position:

ABI Project Manager for the USGS-NPS Vegetation Mapping Program

Contact_Address:

Address_Type: mailing and physical address

Address: 1313 5th St SE, Ste 314

City: Minneapolis

State_or_Province: Minnesota

Postal_Code: 55414

Contact_Voice_Telephone: (612) 331-0729

Contact_Electronic_Mail_Address: jim_drake@natureserve.org

Process_Step:

Process_Description:

SPATIAL DATABASE: The vegetation field plots were collected in UTM projection, Zone 15, North American Datum of 1927 (NAD27) and NAD83 using a PLGR (a few locations were collected using a Trimble GPS unit). The NAD27 X-Y coordinates (all coordinates collected in 1996 and 1997, and 2 of the 15 collected in 1998) were converted to UTM, Zone 15, NAD83 using ArcInfo (Version 7.2.1 Patch 2). The look up table (LUT) containing select information of the vegetation plot (i.e. classification names and codes) was originally

created in Microsoft (R) Excel 97 and then converted to dBASE IV format (dbf). The LUT was imported into ArcView (R) GIS (Version 3.1) as an Event Theme using the UTM, Zone 15, NAD83 X-Y coordinates and then converted to a Shapefile coverage. USGS 7.5-minute and 3.75-minute quadrangle boundary names were merged with the vegetation field plot Shapefile coverage using ArcView software. The Shapefile coverage was then converted to an ArcInfo coverage using the Shapearc command in ArcInfo (Version 8.0.2). ArcInfo was used to produce the ArcInfo Export file. In addition to the spatial database, the entire physical description data set was exported from the PLOTS database, available in dBASE IV format.

Process_Date: 2000
Process_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Kevin D. Hop
Contact_Organization:
U.S. Geological Survey, Upper Midwest Environmental Sciences Center
Contact_Position: Project Team Leader - Biologist (Remote Sensing)
Contact_Address:
Address_Type: mailing and physical address
Address:
U.S. Geological Survey, Upper Midwest Environmental Sciences Center, 575 Lester Avenue
City: Onalaska
State_or_Province: Wisconsin
Postal_Code: 54650
Contact_Address:
Address_Type: organization address
Address: 2630 Fanta Reed Road
City: La Crosse
State_or_Province: Wisconsin
Postal_Code: 54603
Contact_Voice_Telephone: (608) 783-7550 ext 46
Contact_Voice_Telephone: (608) 783-6451 (organization)
Contact_Facsimile_Telephone: (608) 783-8058
Contact_Facsimile_Telephone: (608) 783-6066 (org)
Contact_Electronic_Mail_Address: kevin_hop@usgs.gov

Process_Step:
Process_Description:
DATABASE SET: The entire species listing data set was exported from the PLOTS database into a dBASE IV file format.
Process_Date: 2000
Process_Contact:
Contact_Information:
Contact_Person_Primary:
Contact_Person: Kevin D. Hop
Contact_Organization:
U.S. Geological Survey, Upper Midwest

Environmental Sciences Center
Contact_Position: Project Team Leader - Biologist (Remote Sensing)
Contact_Address:
Address_Type: mailing and physical address
Address:
U.S. Geological Survey, Upper Midwest
Environmental Sciences Center, 575 Lester Avenue
City: Onalaska
State_or_Province: Wisconsin
Postal_Code: 54650
Contact_Address:
Address_Type: organization address
Address: 2630 Fanta Reed Road
City: La Crosse
State_or_Province: Wisconsin
Postal_Code: 54603
Contact_Voice_Telephone: (608) 783-7550 ext 46
Contact_Voice_Telephone: (608) 783-6451 (organization)
Contact_Facsimile_Telephone: (608) 783-8058
Contact_Facsimile_Telephone: (608) 783-6066 (org)
Contact_Electronic_Mail_Address: kevin_hop@usgs.gov

Spatial_Data_Organization_Information:
Indirect_Spatial_Reference:
Voyageurs National Park is located in northern
Minnesota, with the northern extent of the Park
bordering Ontario, Canada. The northwest corner
of the Park is 18 miles east of International
Falls, Minnesota. The southwest corner of the
Park is adjacent the Boundary Waters Canoe Area,
Superior National Forest.
Direct_Spatial_Reference_Method: Point
Point_and_Vector_Object_Information:
SDTS_Terms_Description:
SDTS_Point_and_Vector_Object_Type: Point

Spatial_Reference_Information:
Horizontal_Coordinate_System_Definition:
Planar:
Grid_Coordinate_System:
Grid_Coordinate_System_Name: Universal Transverse Mercator
Universal_Transverse_Mercator:
UTM_Zone_Number: 15
Transverse_Mercator:
Scale_Factor_at_Central_Meridian: 0.9996
Longitude_of_Central_Meridian: -93
Latitude_of_Projection_Origin: 0
False_Easting: 500000
False_Northing: 0
Planar_Coordinate_Information:
Planar_Coordinate_Encoding_Method: coordinate pair
Coordinate_Representation:
Abscissa_Resolution: 1
Ordinate_Resolution: 1
Planar_Distance_Units: meters
Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1983
Ellipsoid_Name: Geodedic Reference System 80
Semi-major_Axis: 6378137
Denominator_of_Flattening_Ratio: 298.257

Entity_and_Attribute_Information:
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Picea mariana / Ledum groenlandicum / Carex trisperma / Sphagnum spp. Forest
Entity_Type_Definition: Black Spruce Bog
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Picea mariana / Chamaedaphne calyculata / Sphagnum spp. Dwarf-shrubland
Entity_Type_Definition: Black Spruce / Leatherleaf Semi-treed Bog
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
(Chamaedaphne calyculata) - Ledum groenlandicum - Kalmia polifolia Bog Dwarf-shrubland
Entity_Type_Definition: Leatherleaf Bog
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Alnus incana - Salix spp. - Betula pumila / Chamaedaphne calyculata Shrubland
Entity_Type_Definition: Bog Birch - Willow Shore Fen
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Chamaedaphne calyculata - Myrica gale / Carex lasiocarpa Dwarf-shrubland
Entity_Type_Definition: Leatherleaf - Sweet Gale Shore Fen
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Larix laricina - Betula pumila / Chamaedaphne calyculata Shrubland
Entity_Type_Definition: Tamarack Scrub Poor Fen
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Betula pumila / Chamaedaphne calyculata / Carex lasiocarpa Shrubland
Entity_Type_Definition: Bog Birch - Leatherleaf Poor Fen
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:

Entity_Type:
Entity_Type_Label:
Carex lasiocarpa - (Carex rostrata) - Equisetum fluviatile Herbaceous Vegetation
Entity_Type_Definition: Wiregrass Sedge Shore Fen
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Carex lasiocarpa - Carex oligosperma / Sphagnum spp. - Polytrichum spp. Herbaceous Vegetation
Entity_Type_Definition: Northern Sedge Poor Fen
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Calamagrostis canadensis Eastern Herbaceous Vegetation [Provisional]
Entity_Type_Definition: Canada Bluejoint Eastern Meadow
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Carex (rostrata, utriculata) - Carex lacustris - (Carex vesicaria) Herbaceous Vegetation
Entity_Type_Definition: Northern Sedge Wet Meadow
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Phragmites australis Semipermanently Flooded Ruderal Herbaceous Vegetation
Entity_Type_Definition: Eastern Reed Marsh
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Scirpus acutus - (Scirpus fluviatilis) Freshwater Herbaceous Vegetation
Entity_Type_Definition: Freshwater Bulrush Marsh
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label: Typha spp. Midwest Herbaceous Vegetation
Entity_Type_Definition: Midwest Cattail Deep Marsh
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Equisetum fluviatile - (Eleocharis smallii) Herbaceous Vegetation
Entity_Type_Definition: Water Horsetail - Spikerush Marsh
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:

Zizania (aquatica, palustris) Herbaceous Vegetation [Provisional]
Entity_Type_Definition: Wild Rice Marsh
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Potamogeton spp. - Ceratophyllum spp. Midwest Herbaceous Vegetation
Entity_Type_Definition: Midwest Pondweed Submerged Aquatic Wetland
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Nymphaea odorata - Nuphar lutea (ssp. pumila, variegata) Herbaceous Vegetation
Entity_Type_Definition: Northern Water Lily Aquatic Wetland
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Fraxinus nigra - Mixed Hardwoods-Conifers / Cornus sericea / Carex spp. Forest
Entity_Type_Definition: Black Ash - Mixed Hardwood Swamp
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label: Thuja occidentalis - Fraxinus nigra Forest
Entity_Type_Definition: White Cedar - Black Ash Swamp
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Picea mariana / Alnus incana / Sphagnum spp. Forest
Entity_Type_Definition: Black Spruce / Alder Rich Swamp
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label: Larix laricina / Alnus incana Forest
Entity_Type_Definition: Northern Tamarack Rich Swamp
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Thuja occidentalis - (Picea mariana - Abies balsamea) / Alnus incana Forest
Entity_Type_Definition: White Cedar - (Mixed Conifer) / Alder Swamp
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Picea mariana / Ledum groenlandicum / Sphagnum spp. Forest
Entity_Type_Definition: Black Spruce / Labrador Tea Poor Swamp
Entity_Type_Definition_Source: USNVC Association

Detailed_Description:
Entity_Type:
Entity_Type_Label:
Cornus spp. - Salix discolor - (Rosa palustris)
Shrubland
Entity_Type_Definition: Dogwood - Pussy Willow Swamp
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label: Alnus incana Swamp Shrubland [Provisional]
Entity_Type_Definition: Speckled Alder Swamp
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Pinus banksiana - (Picea mariana, Pinus strobus) /
Vaccinium spp. Rocky Woodland
Entity_Type_Definition: Boreal Pine Rocky Woodland
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Pinus banksiana - Mixed Conifer / Cladonia spp.
Nonvascular Vegetation
Entity_Type_Definition: Jack Pine / Lichen Rocky Barrens
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Populus tremuloides - (Populus grandidentata)
Rocky Woodland
Entity_Type_Definition: Mixed Aspen Rocky Woodland
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Quercus ellipsoidalis - Quercus macrocarpa -
(Pinus banksiana) Rocky Woodland
Entity_Type_Definition:
Northern Pin Oak - Bur Oak - (Jack Pine) Rocky
Woodland
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Corylus cornuta - Amelanchier spp. - Prunus
virginiana Rocky Shrubland
Entity_Type_Definition: Boreal Hazelnut - Serviceberry Rocky Shrubland
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Danthonia spicata - Poa compressa Granite
Herbaceous Vegetation
Entity_Type_Definition: Poverty Grass Granite Barrens
Entity_Type_Definition_Source: USNVC Association

Detailed_Description:
Entity_Type:
Entity_Type_Label:
Thuja occidentalis / Abies balsamea - Acer spicatum Forest
Entity_Type_Definition: White Cedar - Boreal Conifer Mesic Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label: Thuja occidentalis - Betula alleghaniensis Forest
Entity_Type_Definition: White Cedar - Yellow Birch Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Pinus banksiana - Populus tremuloides / Diervilla lonicera Forest
Entity_Type_Definition: Jack Pine - Aspen / Bush Honeysuckle Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label: Pinus banksiana / Abies balsamea Forest
Entity_Type_Definition: Jack Pine / Balsam Fir Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Pinus resinosa - Populus tremuloides / Diervilla lonicera - Vaccinium spp. Forest
Entity_Type_Definition: Red Pine - Aspen - Birch Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label: Pinus resinosa / Vaccinium spp. Forest
Entity_Type_Definition: Red Pine / Blueberry Dry Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Pinus strobus - Populus tremuloides / Corylus cornuta Forest
Entity_Type_Definition: White Pine - Aspen - Birch Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Pinus strobus / Acer spicatum - Corylus cornuta Forest
Entity_Type_Definition: White Pine / Mountain Maple Mesic Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Abies balsamea - Betula papyrifera / Diervilla lonicera Forest
Entity_Type_Definition: Balsam Fir - Paper Birch Forest

Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Picea mariana - Populus tremuloides / Mixed Herbs Forest
Entity_Type_Definition: Black Spruce - Aspen Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label: Picea mariana / Pleurozium schreberi Forest
Entity_Type_Definition: Black Spruce / Feathermoss Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Picea glauca - Abies balsamea - Populus tremuloides / Mixed Herbs Forest
Entity_Type_Definition: Spruce - Fir - Aspen Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Picea glauca - Abies balsamea / Acer spicatum / Rubus pubescens Forest
Entity_Type_Definition: Spruce - Fir / Mountain Maple Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Populus tremuloides - Betula papyrifera / (Abies balsamea, Picea glauca) Forest
Entity_Type_Definition: Aspen - Birch / Boreal Conifer Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Populus tremuloides - Betula papyrifera - (Acer rubrum, Populus grandidentata) Forest
Entity_Type_Definition: Aspen - Birch - Red Maple Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Betula papyrifera / Diervilla lonicera - (Abies balsamea) Forest
Entity_Type_Definition: Paper Birch / Fir Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:
Entity_Type:
Entity_Type_Label:
Populus tremuloides - Populus balsamifera - Mixed Hardwoods Lowland Forest
Entity_Type_Definition: Trembling Aspen - Balsam Poplar Lowland Forest
Entity_Type_Definition_Source: USNVC Association
Detailed_Description:

Entity_Type:
Entity_Type_Label:
Quercus macrocarpa / Amelanchier alnifolia /
Aralia nudicaulis - Carex assiniboinensis Forest
Entity_Type_Definition: Northern Bur Oak Mesic Forest
Entity_Type_Definition_Source: USNVC Association
Overview_Description:
Entity_and_Attribute_Overview:
Items within the spatial database look up table in addition to the ArcInfo default items include: 1) VOYA_PLOT - Vegetation Field Plot number, 2) PLOT_CLASS - Classified Community Name (USNVC Association), 3) PLOT_PROV - Provisional Community Name, 4) PLOT_CEGL - Community Element Global Code (Elcode link to USNVC Association), 5) PLOT_DATE - Date field plot was collected (yyyymmdd), 6) X_UTM83 - Easting UTM, Zone 15 coordinate in NAD83, 7) Y-UTM83 - Northing UTM, Zone 15 coordinate in NAD83, 8) QUAD_24K - USGS 7.5-minute quadrangle (1:24,000-scale) field plot is located, and 9) QUAD_12K - USGS 3.75-minute quadrangle (1:12,000-scale) field plot is located.
Entity_and_Attribute_Detail_Citation:
Names, and Community Element Global Codes (AA_CLASS, AA_PROV, AA_CEGL, & MAP_CEGL): Anderson, M., P. Bourgeron, M. T. Bryer, R. Crawford, L. Engelking, D. Faber-Langendoen, M. Gallyoun, K. Goodin, D. H. Grossman, S. Landaal, K. Metzler, K. D. Patterson, M. Pyne, M. Reid, L. Sneddon, and A. S. Weakley. 1998. International classification of ecological communities: terrestrial vegetation of the United States. Volume II: The National Vegetation Classification System: list of types. The Nature Consevancy, Arlington, Virginia, USA.
Entity_and_Attribute_Detail_Citation:
USGS 7.5-minute and 3.75-minute quadrangle names (QUAD_24K & QUAD_12K): USGS 7.5-minute and 3.75-minute Quadrangle Boundary Coverage of Voyageurs National Park and Environs. May 2000. Upper Midwest Environmental Sciences Center, La Crosse, Wisconsin. Note: coverage modified from original source specifically for the Voyageurs NP Vegetation Mapping Project.
Overview_Description:
Entity_and_Attribute_Overview:
Items within the dBASE IV include: 1) Plot Code, 2) Plot Species Counter, 3) Plant Symbol, 4) Scientific Name, 5) Common Name, 6) Family, 7> Specimen Number, 8) Used Plants, 9) Source, 10) Within Plot, 11) Stratum Sort, 12) Stratum, 13) Diagnostic, 14) Range Cover, 15) Real Cover, 16) Other Measure 1, 17) Other Measure 2, 18) DBH, 19) Update, and 20) User
Entity_and_Attribute_Detail_Citation:
Plant Symbol and Scientific Name: USDA, NRCS 1999.

The Plants database
(http://plants.usda.gov/). National Data
Center, Baton Rouge, LA 70874-4490 USA.

Distribution_Information:
Distributor:
Contact_Information:
Contact_Person_Primary:
Contact_Person: USGS-NPS Vegetation Mapping Program Coordinator
Contact_Organization: U.S. Geological Survey, Center for Biological Informatics
Contact_Address:
Address_Type: mailing and physical address
Address:
U.S. Geological Survey, Center for Biological
Informatics, MS 302, Room 8000, Building 810,
Denver Federal Center
City: Denver
State_or_Province: Colorado
Postal_Code: 80225
Contact_Voice_Telephone: (303) 202-4220
Contact_Facsimile_Telephone: 303-202-4229
Contact_Facsimile_Telephone: 303-202-4219 (org)
Contact_Electronic_Mail_Address: gs-b-npsveg@usgs.gov
Resource_Description:
Vegetation Field Plot Data (Physical Descriptions)
and Spatial Database for the Voyageurs National
Park Vegetation Mapping Program
Distribution_Liability:
Although these data have been processed
successfully on a computer system at the U.S.
Geological Survey, no warranty expressed or
implied is made regarding the accuracy or utility
of the data on any other system or for general or
scientific purposes, nor shall the act of
distribution constitute any such warranty. This
disclaimer applies both to individual use of the
data and aggregate use with other data. It is
strongly recommended that these data are directly
acquired from a U.S. Geological Survey server, and
not indirectly through other sources which may
have changed the data in some way. It is also
strongly recommended that careful attention be
paid to the contents of the metadata file
associated with these data. The U.S. Geological
Survey shall not be held liable for improper or
incorrect use of the data described and/or
contained herein.
Standard_Order_Process:
Digital_Form:
Digital_Transfer_Information:
Format_Name: HTML
Digital_Transfer_Option:
Online_Option:
Computer_Contact_Information:
Network_Address:
Network_Resource_Name: http://biology.usgs.gov/npsveg/voya/fielddata.html

Fees: None

Metadata_Reference_Information:
Metadata_Date: 200102
Metadata_Review_Date: 20050520
Metadata_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: USGS-NPS Vegetation Mapping Program Coordinator
Contact_Address:
Address_Type: mailing and physical address
Address:
U.S. Geological Survey, Center for Biological Informatics, MS 302,
Room 8000, Building 810, Denver Federal Center
City: Denver
State_or_Province: Colorado
Postal_Code: 80225
Country: USA
Contact_Voice_Telephone: (303) 202-4220
Contact_Facsimile_Telephone: (303) 202-4219
Contact_Electronic_Mail_Address: gs-b-npsveg@usgs.gov
Metadata_Standard_Name: FGDC-STD-001.1-1999 Content Standard for Digital Geospatial Metadata, 1998 Part 1:
Biological Data Profile, 1999
Metadata_Standard_Version: FGDC-STD-001-1998
Metadata_Extensions:
Online_Linkage: http://biology.usgs.gov/fgdc.bio/bionwext.txt
Profile_Name: Biological Data Profile FGDC-STD-001.1-1999